

Memorandum To: Administrative Record for the *Athos I* assessment

From: Eric English, NOAA, Office of Response and Restoration

Subject: Response to review of Dr. George Parsons regarding the
Athos/Delaware River Lost Use Valuation Report

Date: 17 April 2007

This memo addresses the review provided by Dr. George Parsons of the University of Delaware regarding the *Athos/Delaware River Lost Use Valuation Report*. The trustees acknowledge the support expressed by Dr. Parsons for the methods and conclusions of the valuation report. This memo seeks to clarify certain aspects of the valuation methods which are the subject of questions raised in the review, in particular, the distinction between values applied to lost, substitute, and degraded trips.

To value losses from the Delaware River oil spill, surveys were conducted to determine changes in recreational use of the river due to the spill. The types of recreation addressed in the surveys included boating, fishing and hunting. Analysis of the surveys resulted in estimates of “lost” trips, “substitute” trips, and “degraded” trips. Lost trips occurred when a recreator took fewer trips to the Delaware River, substitute trips occurred when a recreator changed the location of a Delaware River trip from the impacted area to another area of the river, and degraded trips occurred when a recreator took trips to an impacted area under conditions perceived to be degraded due to the spill.

The trustees valued lost and substitute trips using the average value of an angling, hunting or boating trip reported by studies in the economics literature. Studies in the literature value the loss of access to a site. When access to a site is lost, the decline in trips at the site includes both lost trips (a decline in the total number of recreation trips taken by residents of a given region) and substitute trips (the displacement of recreation trips from the studied site to other sites in the region). Since literature values represent a combination of these two effects, values from the literature can be reasonably applied to both lost and substitute trips. It is rare for the literature to evaluate degraded trips. However, the issue of degraded trips is addressed in the American Trader oil spill assessment (Chapman and Hanemann 2001). Following methods applied in the American Trader case, the trustees valued the loss associated with degraded trips at 20 percent of the value of lost or substitute trips. As described by Chapman and Hanemann, the American Trader case was the subject of litigation and the court’s decision upheld the lost recreational use assessment, including the 20-percent figure for degraded trips. The 20-percent figure has also been applied in previous oil-spill assessments conducted with the cooperation of economic experts representing both trustees and responsible parties (Byrd et al. 2001).

In his review of the Athos assessment, Dr. Parsons notes that there is little methodological support for the 20 percent figure provided by the Chapman and

Hanemann study. Dr. Parsons also suggests that the value of a degraded trip could potentially be higher than the value of a lost or substitute trip. Support is offered in the form of an illustration showing the hypothetical effect of an oil spill on the demand curve for recreation trips, where the area under demand curve represents the value of trips. For the case illustrated, the average lost value of a degraded trip is higher than the average lost value of a substitute or lost trip.

It is important to note that the illustration provided by Dr. Parson is speculative. For example, the representation of demand as a straight-line function is one possible assumption, but other functional forms would also be possible. In fact, alternative assumptions based on a logistic or exponential form for demand are more common in the literature. These alternative functional forms would lead to different conclusions about the value of degraded trips. Dr. Parson's review does not explore these alternative assumptions, and does not offer any specific suggestions regarding a more appropriate method for valuing degraded trips.

The trustees acknowledge the potential uncertainties identified by Dr. Parsons in the assessment of recreation losses from the Athos incident. However, the trustees have determined that the assessment methods applied in the Lost Use Valuation Report represent a reasonable approach for the following reasons: 1) The cost of a site-specific study that could reduce uncertainty in the calculation of recreational losses would be disproportionate to the estimated extent of losses; 2) As noted by Dr. Parsons, it is appropriate to apply some reasonable estimate of per-trip loss to degraded as well as lost and substitute trips; 3) The only source of information available in the literature regarding the appropriate value for a degraded trip appears to be the Chapman and Hanemann (2001) study; and 4) The comments provided by Dr. Parsons do not identify any alternative method for assigning per-trip values.

The trustees welcome and support research that may lead to methodological refinements for future assessments. The assessment contained in the Lost Use Valuation Report appears to represent the best available methods and is believed to be reasonable and valid.

Byrd, H., E. English, N. Meade, and T. Tomasi (2001), *Chalk Point Oil Spill: Lost Use Valuation Report*, National Oceanic and Atmospheric Administration, U.S. Fish and Wildlife Service, Maryland Department of the Environment, Maryland Department of Natural Resources, May.

Chapman, D. and M. Hanemann (2001), "Environmental damages in court: The American Trader case", *The Law and Economics of the Environment*, Anthony Heyes, ed., Edward Elgar, Northampton, MA.